

**UTILITY
PATENT APPLICATION
TRANSMITTAL**

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	P18720	Total Pages	
Inventor(s) or Application Identifier	Dr. Günter HALMSCHLAGER and Dr. Walter HOLZER		
Title: BELT FOR MACHINES FOR PRODUCING MATERIAL WEBS AND PROCESS OF PRODUCING THE BELT			

Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231



ADDRESS TO:

APPLICATION ELEMENTS**ACCOMPANYING APPLICATION PARTS**

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1. Free Transmittal Form

2. Specification [Total Pages 18]
(preferred arrangement set forth below)
 - Descriptive title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure

3. Drawing(s) (35 USC 113) [Total Sheets 1]

4. Oath or Declaration [Total Pages 3]
 a. Newly executed (original or copy) Unexecuted
 b. Copy from a prior application (37 CFR 1.63(d))
 (for continuation/divisional with Box 18 completed)
 [Note Box 5 below]
 i. DELETION OF INVENTOR(S)
 Signed statement attached deleting inventor(s)
 named in the prior application, see 37 CFR 1.63(d)(2)
 and 1.33(b).

5. Incorporation By Reference (useable if Box 4b is checked)
 The entire disclosure of the prior application, from which a copy
 of the oath or declaration is supplied under Box 4b, is considered
 as being part of the disclosure of the accompanying application
 and is hereby incorporated by reference therein.

6. Microfiche Computer Program (Appendix)

7. Nucleotide and/or Amino Acid Sequence Submission
 (if applicable, all necessary)
 a. Computer Readable Copy
 b. Paper Copy (identical to computer copy)
 c. Statement verifying identity of above copies

8. Assignment Papers (cover sheet & document(s))

9. 37 CFR 3.73(b) Statement (when there is an assignee) Power of Attorney

10. English Translation Document (if applicable)

11. Information Disclosure Statement (IDS)/PTO-1449 Copies of IDS Citations

12. Preliminary Amendment

13. Return Receipt Postcard (MPEP 503)
 (Should be specifically itemized)

14. Small Entity Statement(s) Statement filed in prior application,
 Status still proper and desired

15. The prior application is assigned of record to _____.

16. Foreign priority claimed
 a. Claim of Priority
 b. Certified Copy of Priority Document(s)

17. Other: Cover Letter Regarding Executed Application

18. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

Continuation Divisional Continuation-in-part (CIP) of prior Application No. _____ / _____, filed _____.

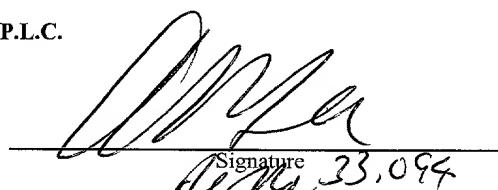
19. Amend the specification by inserting before the first line the sentence:

This application is a __ continuation-in-part, __ continuation, __ division, of Application No. _____ / _____, filed _____.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Günter HALMSCHLAGER et al.) Applications Branch
Appln. No. : Not yet assigned)
Filed : Concurrently herewith)
For : BELT FOR MACHINES FOR PRODUCING MATERIAL WEBS AND
PROCESS OF PRODUCING THE BELT

COVER LETTER REGARDING EXECUTED APPLICATION

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

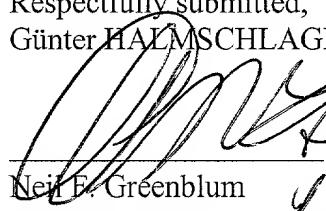
The undersigned points out that the executed application being filed herewith includes copies of pages 1 - 3 of an executed Declaration forwarded by facsimile, and pages 1 - 18 and 1 sheet of drawings which were added by the law firm of the undersigned, which are identical to pages 1 - 18 and 1 sheet of drawings forwarded for execution. Further, the undersigned has been advised that the application was physically present when the inventors executed the Declaration.

Accordingly, Applicants respectfully submit that the present application is properly executed and should be considered as filed in executed form. However, if the U.S. Patent and Trademark Office determines that the present application is not properly executed, Applicants respectfully request that the present application be treated as an unexecuted application under 37 C.F.R. 1.53(b) and (f).

P18720.A01

Should there be any questions or comments, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Günter HALMSCHLAGER et al.


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January 12, 2000
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TITLE OF THE INVENTION

**BELT FOR MACHINES FOR PRODUCING MATERIAL WEBS
AND PROCESS OF PRODUCING THE BELT**

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P18720.S02

BELT FOR MACHINES FOR PRODUCING MATERIAL WEBS AND
PROCESS OF PRODUCING THE BELT
CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims priority under 35 U.S.C. § 119 of German
5 Patent Application No. 199 00 989.9, filed on January 13, 1999, the disclosure of
which is expressly incorporated by reference herein in its entirety.

BACKGROUND OF THE INVENTION

10 1. Field of the Invention

The present invention concerns a belt for machines for producing material webs, particularly paper webs. The invention also concerns a process of producing the belt.

15 2. Discussion of Background Information

In paper machines, the use of screens made of metallic or plastic filaments for supporting a paper web is known. Due to their permeability, such screens cannot be used as sealing belts which, in drying areas of paper machines, serve to seal off a drying space which borders on a heated surface, such as the surface of a drying cylinder. For such purposes, all-metal belts are used which are very difficult to handle and which, particularly because of their great weight and low flexibility, place an upper limit on the belt velocity and thus the operating speed of the paper machine. An additional disadvantage of all-metal belts is that their width, which amounts to approximately 2 m maximum, is limited for reasons of manageability.

25 **SUMMARY OF THE INVENTION**

The invention provides a belt of the aforementioned type, as well as a process

for producing such a belt, which is easy to manage and in particular can be used as a sealing belt.

The belt is made of a compound material which includes a sheet material prepared from preferably long-chain strength supports, in which interstices between the strength supports are at least partially filled with a filler.

Because of the linkage of strength supports and filler, the weight of the belt according to the invention can be reduced in comparison to all-metal belts without impairing the stability and strength of the belt. Furthermore, the belt is significantly more flexible as a result of the compound material according to the invention. In principle, the belt according to the invention can be manufactured in any desired width, which can amount to more than 2 m. A further advantage lies in the fact that the production costs are lower than for all-metal belts. The invention additionally enables the surface composition and in particular the thermal conductivity of the belt, and thus the heat transfer properties of this belt, to be purposely adjusted by altering the amount of strength support on the overall surface. On the whole, a belt is obtained from the invention which is easily handled, economical, and versatile.

In one embodiment of the invention, the compound material is at least substantially impermeable to fluids such as a liquid.

The belt according to the invention can moreover be used as a sealing belt in drying areas, for example, of paper machines. The material which fills the interstices in the sheet material prevents the uncontrolled escape of moisture into the surroundings from the material or paper web being dried, which web is led through a drying area which is bounded by the heated surface or a drying cylinder and the belt according to the invention.

In another embodiment of the invention, beadlike protuberances, which are preferably formed from the strength supports of the sheet material, are provided in the

edge regions.

The belt according to the invention may be provided with integrated sealing beads which can be formed during manufacture of the sheet material. The sealing beads, which can be made of metal or plastic, seal the aforementioned drying space for the material web to be dried off from its surroundings along with the heated surface and the region of the belt lying between the sealing beads. As a result, separate sealants are therefore not required according to the invention.

In another embodiment of the invention, a surface which is at least substantially sealed is formed on at least one side of the strength supports.

By utilizing a sealed surface, large-surface contact is facilitated between the material used for the strength supports and the heated surface of, for example, a drying device, such as a drying cylinder, or a cooling fluid. When a material of high thermal conductivity, especially metal, is used for the strength supports, the thermal conductivity of the belt and thus the transfer of heat through the belt can be enhanced and even maximized. It is also possible to form the belt with one of the strength supports on each of the two sides of the belt in order to provide at least a substantially sealed surface. In this manner, when metal is used for the strength supports, heat transfer properties of the belt according to the invention can be obtained which at least approximately correspond to heat transfer properties of an all-metal band.

In another embodiment of the invention, the strength supports are interwoven with one another.

The sheet material formed hereby from a fabric can be manufactured and targeted for a specific use with comparative ease, as well as reproducibly provided with desired characteristics. In particular, by selecting a specific weaving process, the amount of strength supports on the overall surface of the belt, and thus the heat transfer properties of such a belt, can be purposefully influenced.

The invention also provides that a sheet material is prepared from preferably long-chain strength supports, especially metallic filaments, and interstices between the strength supports are filled at least partially with a filler, in particular with plastic.

In a preferred embodiment of the invention, the sheet material is dipped in
5 liquid filler.

The sheet material is thus saturated to some degree with the filler, such that the interstices are filled in a particularly simple and rapid manner, and the liquid imperviousness of the compound material, which is formed by the strength supports and by the filler which is cured in its ultimate state, can be produced.

10 After submersion in the filler, excess material covering the surfaces of the sheet material can be scraped off in order to expose the strength supports which form the surface in question. Here, the sheet material can be treated such that the strength supports and the filler located between the strength supports form at least an approximately smooth surface.

15 According to one aspect of the invention there is provides a belt for a material web producing machine, which includes a plurality of long-chain strength supports arranged to form interstices, and a filler at least partially filling the interstices. The belt may be used to support a paper web in the web producing machine. The long-chain strength supports may include a metal having a high thermal conductivity. The metal may be one of stainless steel and bronze. The long-chain strength supports may be filaments. The filaments may be a metal.
20

25 The invention provides that the long-chain strength supports may be of many shapes. They may be substantially circular in cross-section, substantially rectangular cross-section, substantially square in cross-section, substantially oval in cross-section, or have a polygonal cross-section. Moreover, the belt may utilize any combination of these shapes. Further, the belt may utilize many different sizes which are combined

together. The long-chain strength supports may also be of a variable cross-sectional shape along their lengths.

The invention further provides that the filler may be a plastic. That the belt may be at least substantially impermeable to a fluid, such as a liquid. The belt may 5 utilize beadlike protuberances located at peripheral regions. The beadlike protuberances may be formed by the long-chain strength supports. The beadlike protuberances may be formed by the woven long-chain strength supports, at least one additional material mixture, and the filler.

The belt may have a surface which substantially includes the long-chain strength supports. The belt may be impermeable to a fluid. The belt may include a 10 smooth surface which substantially includes the long-chain strength supports covering the filler. The belt may be a screen. The screen may be flexible and formed of the woven long-chain strength supports. The belt may be an interwoven sheet of the long-chain strength supports.

The invention also provides for a process for producing a belt, which includes 15 forming a sheet from a plurality of long-chain strength supports, the sheet including a plurality of interstices disposed between the long-chain strength supports, and filling at least a portion of the interstices with a filler. The filler may be a plastic. The long-chain strength supports may be a metal. The filling may also include dipping the sheet into a liquid filler. The filling may alternatively provide for spraying the sheet 20 with a liquid filler. The process may include smoothing at least one surface of the sheet after filling the sheet. The filler may be a liquid. The smoothing may include treating the at least one surface to remove a portion of the filler. The treating may include grinding the at least one surface. The process may include scraping at least 25 one surface of the sheet after filling the sheet. The scraping may be removing a portion of the filler from the at least one surface. The process may further include

weaving the long-chain strength supports. The weaving density may be adjustable based upon a desired surface requirement. The process may include guiding a paper web on the belt.

According to another aspect of the invention, there is provided a belt for 5 guiding a material web, which includes a woven metal screen, the woven metal screen including metal filaments running in a longitudinal direction, the metal filaments crossing one another so as to form interstices, and a filler which at least partially fills the interstices. The belt may also include at least two filaments disposed within the interstices and running substantially perpendicular to the longitudinal direction. The 10 metal may be stainless steel.

The process for producing a belt, may include forming a sheet from a plurality of metal filaments running in a longitudinal direction, the sheet including a plurality of interstices disposed between filaments, disposing metal filaments perpendicular to the longitudinal direction and within the interstices, filling at least a portion of the interstices with a plastic filler, scraping a portion of the filler from at least one surface of the sheet to expose the metal filaments. The process may also include curing the 15 filler, and grinding the at least one surface.

Other exemplary embodiments and advantages of the present invention may be ascertained by reviewing the present disclosure and the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is further described in the detailed description which follows, in reference to the noted drawing by way of a non-limiting example of an exemplary embodiment of the present invention, and wherein:

25 The figure partially shows a belt in a side view section according to an exemplary embodiment of the invention.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

The particulars shown herein are by way of example and for purposes of illustrative discussion of the embodiments of the present invention only and are presented in the cause of providing what is believed to be the most useful and readily understood description of the principles and conceptual aspects of the present invention. In this regard, no attempt is made to show structural details of the present invention in more detail than is necessary for the fundamental understanding of the present invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the present invention may be embodied in practice.

The belt 10 according to the invention depicted in the figure includes a flat metal fabric made of intertwined metallic fibers 12, 14, 16 as strength supports which are preferably made of stainless steel or bronze. In principle, even filaments made of various metals can be processed according to the invention to form a belt.

The cross-sectional shape of the strength supports can be freely chosen in principle, such that the cross section over the length of the strength supports can be constant as well as variable. The strength supports exhibit an approximately circular cross section, for example, but can also have a strip-like or band-like shape, for example, and can exhibit a cross section in the shape of a flat rectangle with rounded edges, for example. Mixed cross-sectional shapes of the strength supports within a belt 10 are also possible according to the invention.

In the embodiment shown, fibers or filaments 16 run two at a time through partitions formed by fibers or filaments 12, 14 which run perpendicular thereto. In principle, any given weaving process can be used according to the invention in order to manufacture from metallic filaments or narrow strips or bands 12, 14, 16 a sheetlike sheet material having the desired width.

A plastic material 18 is present as filler in the interstices between individual filaments 12, 14, 16, with filaments 12, 14, 16 serving as supports for plastic material 18. In the sectional plane illustrated, the surfaces of the belt 10 are formed from filaments 12, 14 which run horizontally in the figure. In each of the partitions defined by filaments 12, 14, filaments 16, which run two at a time, can be imbedded in the plastic material 18 such that an inner connection, formed between filaments 16 and plastic material 18, is guaranteed by the liquid impermeability of belt 10. However, belt 10 according to the invention can also be manufactured such that liquid impermeability is assured even without an inner connection between the strength supports and the plastic material and, in fact, is achieved by a self-sealing effect arising from exertion of pressure from flat belts.

In principle, the manner in which a sheet material having interstices formed from strength supports, in particular metallic filaments, is manufactured may be freely chosen, depending in particular on the desired properties. Preferably, however, a flat metal fabric is prepared from metallic filaments by a weaving process in which the weaving method of this fabric is chosen corresponding to the respective requirements.

The metallic filaments can thus be processed or interwoven with one another such that the sheet material exhibits a substantially sealed metallic surface, between which the filler, in particular plastic, is placed. As a result, the amount of filler or plastic on the overall surface of the belt is very small or negligible.

In order to manufacture belt 10 according to the invention, metallic filaments 12, 14, 16 are first interwoven with one another according to the particular weaving process, in order to produce the metallic sheet material which to some degree serves as a skeleton for belt 10. This metal fabric is subsequently dipped into a bath of liquid plastic in order to fill the interstices in the fabric.

After removal from the dip bath, plastic material, which covers the surfaces of

the metal fabric now filled with plastic, is removed in order to create metallic polished surfaces. To this end, the plastic, which is preferably still liquid, can be removed by scraping, for example, or by scraping in the interstices near the surface. The surfaces can be smoothed thereby. In this manner, care is taken that the amount of metallic 5 filaments 12, 14, 16 on the overall surface of the belt, which is determined by the particular weaving process, is still present following the plastic treatment and curing of the plastic. In an additional process step, belt 10 can undergo final treatment, for example, by grinding of the belt surface.

10 Although the previously described use of a plastic dip bath represents the preferred procedure, an alternative option for placing plastic into the interstices would involve spraying the metal fabric with liquid plastic and then, if desired, removing the plastic covering from the surfaces in order to expose the metallic filaments.

15 The preferred application of the belt according to the invention provides for the use of the sealing belt in the drying areas of paper machines. To this end, the sheetlike sheet material can be manufactured such that beadlike protuberances are present which protrude at least in one direction into the peripheral regions (not shown in the figure).

20 These sealing beads can be produced, for example, by intertwining metallic filaments, thereby being formed at the same time by processing of the sheet fabric. It is also possible to form the sealing beads using the plastic material lying on the surface of the sheet fabric. The sealing beads can also include another material which is used neither for the strength supports nor for the filler, or a material mixture or compound material.

25 The belt according to the invention is transported to a drying device of a paper machine, for example, to a drying cylinder which has a heatable surface, together with the paper web to be dried and one or several screens, such that the belt, the two

5 sealing beads of the belt, and the heated surface of the drying cylinder delimit a drying space which extends over a portion of the circumference of the drying cylinder. The paper web to be dried and the screens are located in this drying space. The paper web can lie directly on the drying cylinder, whereas the screens are arranged between the paper web and the sealing belt according to the invention. Depending on the width of the belt, the lateral sealing beads of the belt lie either directly on the drying cylinder or on one of the screens which lie on the cylinder surface.

10 Because of the liquid impermeability of the compound material according to the invention, the moisture which vaporizes from the paper web cannot escape from the drying space sealed off by the belt. The good thermal conductivity of the belt assures rapid heat removal, such that the moisture at the screen condenses and is carried away from the drying area by this thermal conductivity.

15 It is noted that the foregoing examples have been provided merely for the purpose of explanation and are in no way to be construed as limiting of the present invention. While the present invention has been described with reference to an exemplary embodiment, it is understood that the words which have been used herein are words of description and illustration, rather than words of limitation. Changes may be made, within the purview of the appended claims, as presently stated and as amended, without departing from the scope and spirit of the present invention in its aspects. Although the present invention has been described herein with reference to 20 particular means, materials and embodiments, the present invention is not intended to be limited to the particulars disclosed herein; rather, the present invention extends to all functionally equivalent structures, methods and uses, such as are within the scope of the appended claims.

LIST OF REFERENCE NUMBERS

10	Belt	
12, 14	Metallic filaments	
5	16	Metallic filaments
18	Plastic material	

WHAT IS CLAIMED

1. A belt for a material web producing machine, comprising:
a plurality of long-chain strength supports arranged to form interstices; and
a filler at least partially filling the interstices.

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2. The belt of claim 1, wherein the belt supports a paper web in the web
producing machine.

10 3. The belt of claim 1, wherein the long-chain strength supports comprise a

metal having a high thermal conductivity.

15 4. The belt of claim 3, wherein the metal is one of stainless steel and
bronze.

5. The belt of claim 1, wherein the long-chain strength supports comprise
filaments.

6. The belt of claim 5, wherein the filaments comprise a metal.

20 7. The belt of claim 1, wherein the long-chain strength supports comprise a
substantially circular cross-section.

8. The belt of claim 1, wherein the long-chain strength supports comprise a
substantially rectangular cross-section.

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9. The belt of claim 1, wherein the long-chain strength supports comprise a

substantially square cross-section.

10. The belt of claim 1, wherein the long-chain strength supports comprise a substantially oval cross-section.

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11. The belt of claim 1, wherein the long-chain strength supports comprise a polygonal cross-section.

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12. The belt of claim 1, wherein the long-chain strength supports comprise a variable cross-sectional shape along their lengths.

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13. The belt of claim 1, wherein the filler comprises a plastic.

14. The belt of claim 1, wherein the belt is at least substantially impermeable to a fluid.

15. The belt of claim 14, wherein the fluid is a liquid.

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16. The belt of claim 1, further comprising beadlike protuberances located at peripheral regions of the belt.

17. The belt of claim 16, wherein the beadlike protuberances comprise woven long-chain strength supports.

25

18. The belt of claim 16, wherein the beadlike protuberances comprise the woven long-chain strength supports, at least one additional material mixture, and

the filler.

19. The belt of claim 1, wherein the belt comprises a surface which substantially comprises the long-chain strength supports.

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20. The belt of claim 19, wherein the belt is impermeable to a fluid.

21. The belt of claim 1, wherein the belt comprises a smooth surface which substantially comprises the long-chain strength supports covering the filler.

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22. The belt of claim 1, wherein the belt comprises a screen.

23. The belt of claim 22, wherein the screen is flexible and formed of woven long-chain strength supports.

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24. The belt of claim 1, wherein the belt comprises an interwoven sheet of the long-chain strength supports.

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25. A process for producing a belt, comprising:

forming a sheet from a plurality of long-chain strength supports, the sheet comprising a plurality of interstices disposed between the long-chain strength supports; and

filling at least a portion of the interstices with a filler.

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26. The process of claim 25, wherein the filler comprises a plastic.

27. The process of claim 25, wherein the long-chain strength supports comprise a metal.

28. The process of claim 25, wherein the filling further comprises:
5 dipping the sheet into a liquid filler.

29. The process of claim 25, wherein the filling further comprises:
spraying the sheet with a liquid filler.

10 30. The process of claim 25, further comprising:
smoothing at least one surface of the sheet after filling the sheet.

31. The process of claim 30, wherein the filler comprises a liquid.

15 32. The process of claim 30, wherein the smoothing comprises:
treating the at least one surface to remove a portion of the filler.

33. The process of claim 32, wherein the treating comprises grinding the at
least one surface.

20 34. The process of claim 25, further comprising:
scraping at least one surface of the sheet after filling the sheet.

35. The process of claim 34, wherein the scraping comprises removing a
25 portion of the filler from the at least one surface.

36. The process of claim 25, wherein the forming further comprises:
weaving the long-chain strength supports.

37. The process of claim 36, wherein the weaving density is adjustable
5 based upon a desired surface requirement.

38. The process of claim 25, further comprising:
guiding a paper web on the belt.

10 39. A belt for guiding a material web, comprising:
a woven metal screen;
the woven metal screen comprising metal filaments running in a
longitudinal direction, the metal filaments crossing one another so as to form
interstices; and
15 a filler which at least partially fills the interstices.

40. The belt of claim 39, further comprising at least two filaments disposed
within the interstices and running substantially perpendicular to the longitudinal
direction.

20 41. The belt of claim 40, wherein the metal comprises stainless steel.

42. A process for producing a belt, comprising:
forming a sheet from a plurality of metal filaments running in a longitudinal
25 direction, the sheet comprising a plurality of interstices disposed between
filaments;

disposing metal filaments perpendicular to the longitudinal direction and within the interstices;

filling at least a portion of the interstices with a plastic filler;

scraping a portion of the filler from at least one surface of the sheet to

5 expose the metal filaments.

43. The process of claim 42, further comprising:

curing the filler; and

grinding the at least one surface.

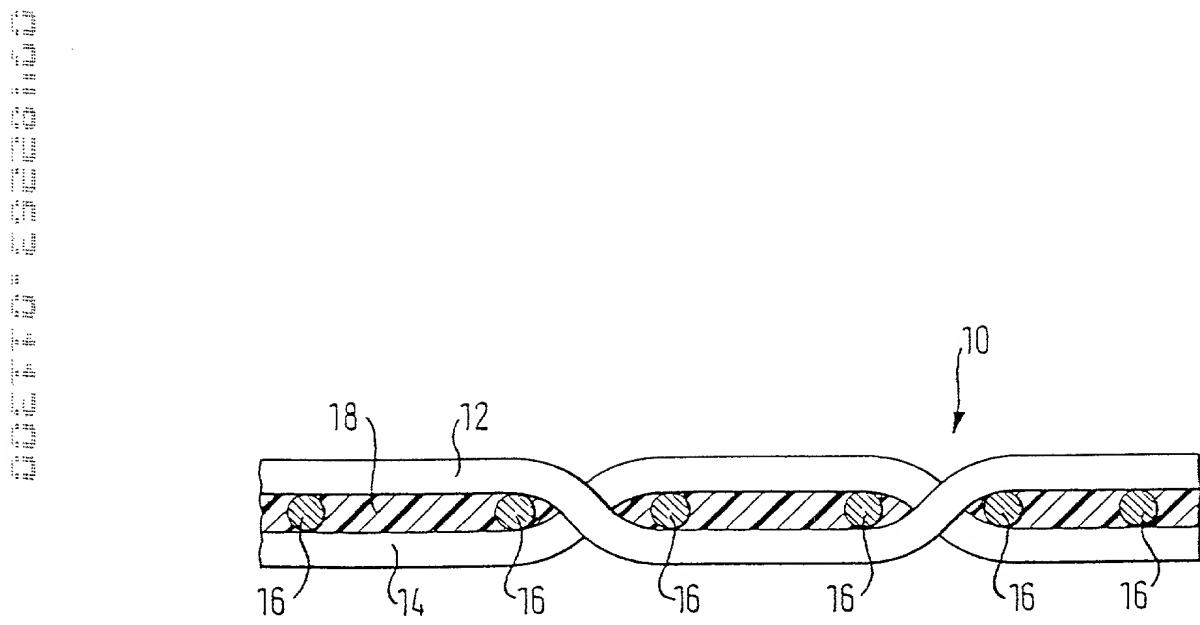
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ABSTRACT OF THE DISCLOSURE

A belt for a material web producing machine and a process of producing the belt. The belt includes a plurality of long-chain strength supports arranged to form interstices and a filler at least partially filling the interstices. The process includes forming a sheet from a plurality of long-chain strength supports with the sheet including a plurality of interstices disposed between the long-chain strength supports, and filling at least a portion of the interstices with a filler.

10



German Language Utility or Design Patent Application Declaration

Ich beanspruche hiermit Prioritätsvorteile unter Title 35, US-Code, § 119(e) aller US-Ämteranmeldungen wie unten aufgeführt.

(Application Number)
(Aktenzeichen)

(Application Number)
(Aktenzeichen)

(Application Number)
(Aktenzeichen)

Zusätzliche einzelnen Anmeldungsnummern sind im ergänzenden Prioritätsantrag aufgeführt.

Ich beanspruche hiermit die mir unter Title 35, US-Code, § 120 zustehenden Vorteile aller unten aufgeführten US-Patentanmeldungen bzw. § 365(c) aller PCT internationales Anmeldungen, welche die Verhüllungen/Strukten von Anwälten bezeichnen, und erkenne, insbesondere der Gegenstand eines jeden früheren Anspruchs dieser Patentanmeldung nicht in einer US-Patentanmeldung, bzw. PCT internationales Anmeldung in, in einer gemäß dem unter Abzweig von Title 35, US-Code, § 112 vergeschriebener Art und Weise offenbart wurde, meine Pflicht zur Offenlegung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Title 37, Code of Federal Regulations, § 1.56 von Bedeutung sind und die im Zeitraum zwischen dem Anmeldetag der früheren Patentanmeldung und dem Anmeldetag oder im Rahmen des Vertrags über die Zusammenarbeit auf dem Gebiet des Patentwesens (PCT) gültigen internationales Anmeldungen bekannt geworden sind.

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I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)

(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)

(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)

Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.

I hereby claim the benefit under Title 35, United States Code § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, to the extent the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

(Status)
(patentiert, schwelend, aufgegeben)
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(patentiert, schwelend, aufgegeben)
(patented, pending, abandoned)

Additional U.S. or international application numbers are listed on a supplemental priority sheet attached hereto.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that those statements were made with the knowledge that willful false statements and the like are made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from either his foreign patent agent or corporate representative, if any, as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In the event of a change in the persons from whom instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

German Language Utility or Design Patent Application Declaration

VERTRETUNGSVOLLMACHT: Als berannter Erfinder beauftrage ich hiermit den (die) nachstehend aufgeführten Patentanwalt (Patentanwälte) und/oder Vertreter mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Angelegenheiten vor dem US-Patent- und Markenamt. (Name(n) und Registrierungsnummer(n) angeben)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Offices connected therewith (list name and registration number)

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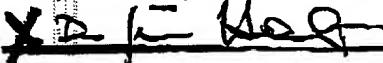
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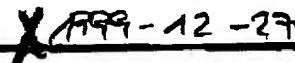
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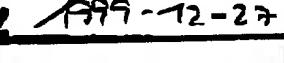
Unterschrift des Erfinders

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